

**DRAFT
SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
PINEDALE ANTICLINE OIL AND GAS EXPLORATION AND DEVELOPMENT PROJECT
SUBLETTE COUNTY, WYOMING**

(Volume 2 of 2)

**Bureau of Land Management
Wyoming State Office
Cheyenne, Wyoming**

**Pinedale Field Office
Pinedale, Wyoming**

In Cooperation with

**State of Wyoming
Sublette County**

December 2006

APPENDIX A

Authorizations in the PAPA ROD

Authorizations in the PAPA ROD

Table 1
Location of Actionable Items in the PAPA ROD

Resource/Issue	Location of Actionable Items in PAPA ROD					
	Required by Statute or Policy	Plan of Development Required	MOU or other Agreement	AEM and/or Monitoring, Reporting	Limits or Controls Stipulated	Required or Suggested Mitigation
Transportation	Section 3	Section 3 Appendix B	Section 3	Section 3 Appendix C	Appendix A-2	Appendix A-3
Air Quality	Section 3	-	Section 3	Section 3 Appendix C	Section 3 Appendix A-1 Appendix A-2	Section 3 Appendix A-3
Special Status Species	Section 3	-	-	Section 3 Appendix C	Section 3 Appendix A-1 Appendix A-2	Section 3 Appendix A-3
Raptor Nest Protection	-	-	-	Section 3 Appendix C	Section 3 Appendix A-1 Appendix A-2 Appendix A-6	Section 3 Appendix A-3
Sage Grouse Protection	-	-	-	Section 3 Appendix C	Section 3 Appendix A-1 Appendix A-2 Appendix A-6	Section 3 Appendix A-3
Big Game Crucial Winter Range Protection	-	-	-	Section 3 Appendix C	Section 3 Appendix A-1 Appendix A-2 Appendix A-6	Section 3 Appendix A-3
Water Resources Protection/Monitoring	-	-	-	Section 3 Appendix C	Section 3 Appendix A-1 Appendix A-2	Section 3 Appendix A-3
Water Well Protection/Monitoring	-	-	-	Section 3 Appendix C	Section 3 Appendix A-2	Section 3 Appendix A-3
Paleontological Values Protection	-	-	-	-	Section 3 Appendix A-2	Appendix A-3
Soils Protection/Reclamation/Monitoring	Section 3	-	-	Section 3 Appendix C	Section 3 Appendix A-2	Appendix A-3
Vegetation Protection/Reclamation/Monitoring	-	-	-	Section 3 Appendix C	Section 3 Appendix A-2	Appendix A-3
Noise and Odor	-	-	-	-	Section 3 Appendix A-2	Appendix A-3
Night Lighting	-	-	-	-	Section 3	-
Cultural/Historical Resources Protection	Section 3	Section 3 Appendix E	Section 3 Appendix E	Section 3 Appendix C	Section 3 Appendix A-1 Appendix A-2	Appendix A-3
Socioeconomics	-	-	-	-	Section 3 Appendix A-6	-
Land Use	-	-	-	Section 3 Appendix C	-	Section 3
Livestock Grazing	-	-	-	Section 3 Appendix C	Appendix A-2 Appendix A-3	Section 3
Hazardous Materials	-	-	-	-	Appendix A-2 Appendix D	-
Remedial Action/Compliance Monitoring	-	-	-	Section 3	-	-

Table 2
Management Area Description, Area, and Objectives

Management Area Description, Area, and Objectives	Allowable Level of Development
MA 1 - Lander Trail – 3,460 acres or 5.41 square miles Management Area Objectives: <ul style="list-style-type: none"> • Preserve the integrity of the trail and the trail viewshed. 	<ul style="list-style-type: none"> • 0 average pads/square mile • 0 maximum pads/square mile • 0 total producing pads threshold
MA 2 - Mesa Breaks – 7,366 acres or 11.51 square miles Management Area Objectives: <ul style="list-style-type: none"> • Maintain the existing quality, suitability and habitat effectiveness of the Mesa Breaks deer crucial winter range. These breaks provide thermal cover and forage during sever winters. • Retain the existing character of the landscape and sensitive viewshed. • Avoid disturbance on slopes 10 percent or greater and on sensitive soils to prevent erosion and altering the sensitive viewshed. 	<ul style="list-style-type: none"> • 0 average pads/square mile • 0 maximum pads/square mile • 0 total producing pads threshold
MA 3 - Unleased Federal Minerals – 1,347 acres or 2.10 square miles Management Area Objectives: <ul style="list-style-type: none"> • These Federal minerals have been closed to mineral lease. They include Federal minerals under the industrial park west of Pinedale, several tracts near Boulder that were withdrawn at the request of the Department of Defense, Native American sensitive sites, etc. The management objective of this MA will be to continue to hold these parcels closed to development. 	<ul style="list-style-type: none"> • 0 average pads/square mile • 0 maximum pads/square mile • 0 total producing pads threshold
MA 4 - Sensitive Viewshed – 8,686 acres or 13.57 square miles Management Area Objectives: <ul style="list-style-type: none"> • Protect the sensitive viewshed by retaining the existing character of the landscape. • Protect/maintain winter and crucial winter deer range. • Protect and maintain existing raptor nesting habitat. 	<ul style="list-style-type: none"> • 2 average pads/square mile • 4 maximum pads/square mile • 28 total producing pads threshold
MA 5 - Big Game Winter Range and Sage Grouse Strutting and Nesting Habitat – 67,801 acres or 105.94 square miles Management Area Objectives: <ul style="list-style-type: none"> • Limit surface disturbance and human activity which could displace deer and antelope from winter ranges and sage grouse from strutting and nesting habitat resulting mortalities and reduced population levels. • Implement measures to screen activities and facilities so they do not attract the attention of a casual observer in VRM Class III on either side of the New Fork and Green Rivers. 	<ul style="list-style-type: none"> • 2 average pads/square mile • 16 maximum pad/square mile • 212 total producing pads threshold
MA 6 - Sage Grouse Strutting and Nesting Habitat – 39,205 acres or 61.26 square miles Management Area Objectives: <ul style="list-style-type: none"> • Protect this area from unnecessary surface disturbance and human activities which could displace sage grouse from crucial strutting and nesting habitat resulting in mortalities and reduced population levels. • Ensure protection of the Green River and adjacent sub-basins from increased erosion and sedimentation. • Avoid activities and facilities that create barriers to the seasonal movements of antelope. • Partially retain the existing character of the landscape, on each side of U.S. Highway 191 and the Wind River Front Special Recreation Management Area (SRMA), by implementing measures which reasonably incorporate into the surface disturbance and/or facility, visual design considerations that will mitigate anticipated visual impacts so they do not dominate the view of the casual observer and so they replicate the existing characteristics of the landscape. 	<ul style="list-style-type: none"> • 3 average pads/square mile • 16 maximum pads/square mile • 183 total producing pads threshold
MA 7 - Ross Butte/Blue Rim – 10,953 acres or 17.11 square miles Management Area Objectives: <ul style="list-style-type: none"> • Avoid disturbance to the fossil-bearing formations on a site-specific basis and protect paleontological fossil resources. • Avoid disturbance on highly erodible soils and maintain soil stability and productivity. • Protect and maintain existing raptor nesting habitat and protect sensitive plant species. • Protect the visual quality of the unique badland area. 	<ul style="list-style-type: none"> • 4 average pads/square mile • 16 maximum pads/square mile • 68 total producing pads threshold

Management Area Description, Area, and Objectives	Allowable Level of Development
MA 8 - Minimal Conflict Area – 26,605 acres or 41.45 square miles Management Area Objectives: <ul style="list-style-type: none"> • Maintain antelope summer range and avoid activities and facilities that will create barriers to the seasonal movements of antelope. • Avoid highly erodible soils. • Partially retain the existing character of the landscape, on each side of U.S. Highway 191 (classified as VRM Class III) and the Wind River Front SRMA, by implementing measures which reasonably incorporate into the surface disturbance and/or facility, visual design considerations that will mitigate anticipated visual impacts so they do not dominate the view of the casual observer and so they replicate the existing characteristics of the landscape. 	<ul style="list-style-type: none"> • 4 average pads/square mile • 16 maximum pads/square mile • 168 total producing pads threshold
MA 9 - Non-Federal Lands – 31,925 acres or 49.88 square miles Management Area Objectives: <ul style="list-style-type: none"> • Private and state lands not under the jurisdiction of the BLM. • BLM cannot impose management objectives or restrictions/limitations on these lands. However, it was suggested during the public workshops that the operators voluntarily adopt the interrelated and interdependent objectives for these areas. Recommendations included maintenance, improvement and restoration of riparian habitat to provided enhanced wildlife and livestock forage/habitat; avoidance of disturbance to scrub-shrub or forested wetland types to protect water quality; survey for cultural and Native American sacred sites; cooperation with private landowners to avoid impacts to area residences; protecting raptor nesting habitat; and continuing the maintenance of livestock grazing and trailing operations. 	<ul style="list-style-type: none"> • 4 average pads/square mile • 16 maximum pads/square mile • 200 total producing pads threshold

Table 3
Stipulations

Stipulation	Number of Actions	Period of Applicable Stipulation			
		2001-02	2002-03	2003-04	2004-05
Big Game Crucial Winter Range	Total Requested	46	50	63	81
	Granted	36	42	53	67
	Partially Granted	0	0	1	12
	Denied	10	8	9	2
Sage Grouse Lek, Winter, and Nesting	Total Requested	31	88	106	107
	Granted	31	86	98	72
	Partially Granted	0	2	0	7
	Denied	0	0	8	28
Raptor Nesting and Winter	Total Requested	8	12	24	49
	Granted	6	10	22	44
	Partially Granted	0	2	0	4
	Denied	2	0	2	1

Table 4
Approved Components in Decision Record

NEPA Document	Approved Components in Decision Record	Decision Conditioned on Requirements
<p>Questar Year-Round Drilling Proposal WY-100-EA05-034 November 2004</p>	<ol style="list-style-type: none"> 1. Construction of a 107-mile long, 6-inch diameter condensate pipeline using the alignment shown in Appendix B of the EA. Approval of drilling operations between November 15, 2005 and April 30, 2006 would be contingent upon that pipeline and the produced water pipeline being operational by that date; if the pipelines were not operational by November 15, 2005, Questar would not winter-drill after that date unless and exception was granted. That exception would be considered on its own merits. 2. Up to two rigs drilling on one well pad between November 15, 2004 and April 30, 2005. Pad location would be selected in coordination with BLM and WGFD. 3. All mitigation described in Section 2.5 of the EA would be in place and operational by November 15, 2005, including initiation of habitat enhancement projects within Questar's leasehold in 2005, except for full implementation of EPA Tier II compliant or alternate fuel drilling rigs. 4. As committed to by Questar, by January 1, 2007, all drilling rigs operating in Questar's leasehold would be either EPA Tier II compliant or would utilize alternate fuels engines whose emissions are equivalent to Tier II engines. 5. Beginning in the winter of 2005-2006, Questar would implement an expanded mule deer research study to determine impacts of winter drilling on mule deer populations. Questar would provide a proposed expanded research design to BLM by July 1, 2005; BLM would submit that proposed design to the Pinedale Anticline Working Group (PAWG) and to the WGFD for review and recommendation. The PAWG and WGFD would make their recommendations to BLM by September 1, 2005; and BLM would approve the proposed or modified research design before September 1, 2005; and BLM would approve the proposed or modified research design before November 1, 2005. Questar must have implemented that research by November 15, 2005. 6. Over a nine year period beginning November 15, 2005, through the winter of 2013-2014, Questar would be allowed to utilize up to six rigs (two rigs per well pad) drilling on up to three well pads between November 15 and April 30 each year. Between May 1 and November 15 of any year under the proposal, Questar could drill with as many rigs from as many of the 61 total well pads as is feasible, with appropriate authorization. 7. Questar could construct and begin drilling from the winter-long well pads before November 15 of any year; however, continuation of activity on those pads after November 15 would be contingent upon all appropriate mitigation being in place and/or operational. 8. This Decision Record authorized a maximum of 61 well pads (52 currently existing and 9 new well pads) within Questar's leasehold. 9. Leasehold development and production would be based on performance objectives to allow Questar maximum flexibility to utilize innovation to maximize gas recovery while providing optimal short- and long-term protection for other resources in their leasehold. 	<ol style="list-style-type: none"> 1. Questar would fully implement the applicant-committed mitigation measures described in Section 2.5 of the EA and the original ROD for the PAPA EIS, except as modified by this decision, by November 15, 2005. Habitat enhancement activities could have begun prior to November 15, at the discretion of BLM and WGFD; 2. Questar would be required to fully implement the performance-based development and production objectives, Conditions of Approval, mitigation, monitoring, and Best Management Practices listed in Appendix A of the Decision Record; 3. The PAWG advisory committee would review and evaluate the above-referenced requirements and make recommendations to BLM on an annual basis regarding continuation, cessation, or addition to those requirements; and 4. The BLM Pinedale Field Manager or designee was the Authorized Officer (AO) for the project. Mitigation and monitoring measures may be modified. Mitigation and monitoring requirements would be determined annually by the AO after receiving the results of on-site inspections, recommendations from the PAWG, and stakeholder consultations. BLM could require additional field studies or documentation in addition to those listed in Appendix A (of the DR) to ensure that reclamation and other resource protection goals are met.

NEPA Document	Approved Components in Decision Record	Decision Conditioned on Requirements
<p>Questar Year-Round Drilling Proposal – Condensate Pipeline Modification (QYDP-CPM) WY-100-EA05-283 July 2005</p>	<ol style="list-style-type: none"> 1. Construction of the 14.4-mile long, 6-inch diameter condensate pipeline using the alignment shown in Appendix A of the EA. Approval of drilling operations between November 15, 2005 and April 30, 2006 would be contingent upon that pipeline and the produced water pipeline being operational by November 15, 2005; if the pipelines were not operational by November 15, 2005, Questar would not winter-drill after that date unless an exception was granted. That exception would be considered on its own merits. 2. Construction of an underground power line to Stewart Point 16-18 CDP from an existing nearby power line. 3. Construction of connecting pipelines between the NGL Stabilizer and Water Handling Facility and Gobblers Knob Compressor Station, and the associated power line. 4. Placement of one blowdown tank on each well pad within the Questar leasehold. 5. Tier II-compliance (or equivalent, or better) of drilling rig engine emissions on all year-round drilling rigs operating in Questar's leasehold by January 1, 2008, as committed to by Questar. 	<ol style="list-style-type: none"> 1. The Questar Year-Round Drilling Proposal (QYDP) Decision Record and its Appendix A (see above) would be in full force and effect except where modified by this Decision Record and its Appendix A. 2. Questar and QGM would fully implement the applicant-committed mitigation measures described in Section 2.5 of the QYDP EA (WY-100-EA05-034) and the original ROD for the PAPA EIS except as modified by the QYDP DR (see above), by November 15, 2005. 3. Questar would fully implement an expanded mule deer research study beginning in the winter of 2005-2006, which will continue existing research and add research into the physiological effects of winter drilling activity, to determine impacts of winter drilling on mule deer populations. 4. Questar would provide a proposed expanded research design to BLM by September 1, 2005; BLM would submit that proposed design to the PAWG and to the WGFD for review and recommendation. Based on PAWG and WGFD recommendations (to BLM by October 15, 2005); BLM would approve an expanded study research design before November 1, 2005. Questar must have implemented that research by November 15, 2005. If BLM, PAWG, and WGFD agree that it is not feasible, a new expanded study implementation date would be set and the public would be notified. 5. Blowdown tanks on all pads put into production after the date of the DR will be no bigger than 90 bbl, low-profile (6-foot high) tanks; blowdown tanks on pads put into production prior to the date of the DR would have existing blowdown tanks converted to these 90 bbl, low-profile (or smaller, technology permitting) tanks by August 1, 2007, as committed to by QGM. 6. QGM would provide a paleontology monitor who would be present during pipeline construction within Bird Canyon; the monitor would coordinate with BLM prior to construction in that area; 7. Questar and QGM would fully implement the performance-based objectives for development and production, Conditions of Approval, mitigation, monitoring, inventories, and Best Management Practices listed in Appendix A of the DR; habitat enhancement activities could begin prior to November 15, 2005, at the discretion of BLM and WGFD, and could be subject to additional NEPA analysis. 8. The PAWG advisory committee would review and evaluate the above-referenced requirements and make recommendations to BLM on an annual basis regarding continuation, cessation, or addition to those requirements; and 9. The BLM Pinedale Field Manager or designee was the Authorized Officer (AO) for the project. Mitigation and monitoring measures may be modified. Mitigation and monitoring requirements would be determined annually by the AO after receiving the results of on-site inspections, recommendations from the PAWG, and stakeholder consultations. BLM could require additional field studies or documentation in addition to those listed in Appendix A (of the DR) to ensure that reclamation and other resource protection goals are met.

NEPA Document	Approved Components in Decision Record	Decision Conditioned on Requirements
ASU Year-Round Drilling Demonstration Project WY-100-EA05-254 September 2005	<ol style="list-style-type: none"> 1. ASU would fully implement the applicant-committed measures described in Section 2.6 of the EA and the ROD for the PAPA EIS, except as modified by this decision, by November 15, 2005. 2. ASU would be required to fully implement the performance-based development and production objective, Conditions of Approval, mitigation, monitoring, and Best Management Practices listed in Appendix A of the DR. 3. As committed to by Shell, catalytic aftertreatment technology would be installed on both of their existing Tier I EPA compliant rigs proposed for the Mesa 7-29 pad to demonstrate EPA Tier II equivalent emissions. Shell would conduct monitoring of rig emissions as discussed in the EA and provide a report to BLM on the effectiveness of the catalytic aftertreatment technology by April 30, 2006. 4. As committed to by Anschutz and Ultra, bi-fuel technology would be installed on the two rigs proposed for the Mesa 10-35 pad and the two rigs proposed for the Mesa 7-34 pad to demonstrate EPA Tier II equivalent emissions. Anschutz and Ultra would conduct monitoring of rig emissions as discussed in the EA and provide a report to BLM on the effectiveness of the catalytic aftertreatment technology by April 30, 2006. 5. The PAWG advisory committee would evaluate and monitor the effectiveness of the above-referenced requirements and make recommendations to BLM regarding continuation, cessation, or addition to those requirements; and 6. The BLM Pinedale Field Manager or designee was the Authorized Officer (AO) for the project. Mitigation and monitoring measures may be modified. Mitigation and monitoring requirements would be determined by the AO after receiving the results of on-site inspections, recommendations from the PAWG, and stakeholder consultations. BLM could require additional field studies or documentation in addition to those listed in Appendix A (of the DR) to ensure that reclamation and other resource protection goals are met. 	<ol style="list-style-type: none"> 1. ASU would fully implement the applicant-committed measures described in Section 2.6 of the EA and the ROD for the PAPA EIS, except as modified by this decision, by November 15, 2005. 2. ASU would be required to fully implement the performance-based development and production objective, Conditions of Approval, mitigation, monitoring, and Best Management Practices listed in Appendix A of the DR. 3. As committed to by Shell, catalytic aftertreatment technology would be installed on both of their existing Tier I EPA compliant rigs proposed for the Mesa 7-29 pad to demonstrate EPA Tier II equivalent emissions. Shell would conduct monitoring of rig emissions as discussed in the EA and provide a report to BLM on the effectiveness of the catalytic aftertreatment technology by April 30, 2006. 4. As committed to by Anschutz and Ultra, bi-fuel technology would be installed on the two rigs proposed for the Mesa 10-35 pad and the two rigs proposed for the Mesa 7-34 pad to demonstrate EPA Tier II equivalent emissions. Anschutz and Ultra would conduct monitoring of rig emissions as discussed in the EA and provide a report to BLM on the effectiveness of the catalytic aftertreatment technology by April 30, 2006. 5. The PAWG advisory committee would evaluate and monitor the effectiveness of the above-referenced requirements and make recommendations to BLM regarding continuation, cessation, or addition to those requirements; and 6. The BLM Pinedale Field Manager or designee was the Authorized Officer (AO) for the project. Mitigation and monitoring measures may be modified. Mitigation and monitoring requirements would be determined by the AO after receiving the results of on-site inspections, recommendations from the PAWG, and stakeholder consultations. BLM could require additional field studies or documentation in addition to those listed in Appendix A (of the DR) to ensure that reclamation and other resource protection goals are met.
Questar Year-Round Drilling Proposal, Addendum WY-100-EA06-043 November 2005.	<ol style="list-style-type: none"> 1. Winter drilling of Mesa 15C-20D after November 15, 2005. The well is on a pad approved in the QYDP EA (WY-100-EA05-034). Well completion was approved with mitigation. 2. Mesa 6-7D would be completed before November 15, 2005. Some equipment would remain on-site, then moved after November 15, 2005. 3. Winter drilling and completion of Mesa 9B-7D and 10-7D from one pad was allowed, with mitigation. 4. Addition on a third rig to drill on the approved Mesa 3-20 winter drilling pad. Well completions were not included. 	<ol style="list-style-type: none"> 1. The accelerated winter development on the Mesa would be monitored for compliance and project effectiveness consistent with the mitigation measures and management requirement described in the Questar Year-Round Drilling Environmental Assessment and Decision Record, November 2004. In addition the attached required mitigation activities would be monitored for compliance during the winter season 2005-2006 (Attachment #1 – Required Mitigation).